

WHAT IS CLAIMED IS:

1. A surface acoustic wave device, comprising:
a quartz plate cut out with a Euler angle at $(0^\circ, 113^\circ \text{ to } 135^\circ, \pm(40 \text{ to } 49)^\circ)$;
and
a plurality of surface acoustic wave elements M1 to Mn connected together in parallel on a main surface of the quartz plate, and provided with at least a pair of IDT electrodes to generate a Rayleigh wave, surface acoustic waves having at least a plurality of different propagation directions of propagation directions ψ_1 to ψ_n being generated from the surface acoustic wave elements M1 to Mn, and the propagation directions ψ_1 to ψ_n satisfying a formula: $\psi_1 \text{ to } \psi_n = 0.3295\theta + 3.3318^\circ \pm 1.125^\circ$, with the Euler angle at $(0^\circ, \theta, \psi)$.
2. A surface acoustic wave device, comprising:
a quartz plate cut out with a Euler angle at $(0^\circ, 113^\circ \text{ to } 135^\circ, \pm(40 \text{ to } 49)^\circ)$;
and
a plurality of surface acoustic wave elements M1 to Mn connected together in parallel on a main surface of the quartz plate, and provided with at least a pair of IDT electrodes to generate a Rayleigh wave, at least a plurality of different ratios η_1 to η_n obtained by dividing electrode width by electrode pitch of the IDT electrodes being given to the surface acoustic wave elements M1 to Mn, and the Euler angle at $(0^\circ, \theta, \psi)$ satisfying a formula: $\psi = 0.3295\theta + 3.3318^\circ \pm 1.125^\circ$.
3. A surface acoustic wave device, comprising:
a quartz plate cut out with a Euler angle at $(0^\circ, 113^\circ \text{ to } 135^\circ, \pm(40 \text{ to } 49)^\circ)$;
and
a plurality of surface acoustic wave elements M1 to Mn connected together in parallel on a main surface of the quartz plate, and provided with at least a pair of IDT electrodes to generate a Rayleigh wave, at least a plurality of different ratios η_1 to η_n obtained by dividing electrode width by electrode pitch of the IDT electrodes being given to the surface acoustic wave elements M1 to Mn, surface acoustic waves having at least a plurality of different propagation directions of propagation directions ψ_1 to ψ_n being generated from the surface acoustic wave elements M1 to Mn, and the propagation directions ψ_1 to ψ_n satisfying a formula: $\psi_1 \text{ to } \psi_n = 0.3295\theta + 3.3318^\circ \pm 1.125^\circ$, with the Euler angle at $(0^\circ, \theta, \psi)$.
4. The surface acoustic wave device according to claim 1, comprising:

at least one of turnover temperatures $Tp1$ to Tpn of a temperature characteristic obtained by each of the surface acoustic wave elements $M1$ to Mn being out of an operating temperature range.

5. The surface acoustic wave device according to claim 2, comprising:

at least one of turnover temperatures $Tp1$ to Tpn of a temperature characteristic obtained by each of the surface acoustic wave elements $M1$ to Mn being out of an operating temperature range.

6. The surface acoustic wave device according to claim 3, comprising:

at least one of turnover temperatures $Tp1$ to Tpn of a temperature characteristic obtained by each of the surface acoustic wave elements $M1$ to Mn being out of an operating temperature range.

7. A method of adjusting a temperature characteristic of the surface acoustic wave device according to claim 1, comprising:

adjusting the temperature characteristic by adjusting an angle of disposition of the surface acoustic wave device on the quartz plate cut out with a Euler angle at (0° , 113° to 135° , $\pm(40$ to $49)^\circ$).

8. A method of adjusting a temperature characteristic of the surface acoustic wave device according to claim 2, comprising:

adjusting the temperature characteristic by adjusting an angle of disposition of the surface acoustic wave device on the quartz plate cut out with a Euler angle at (0° , 113° to 135° , $\pm(40$ to $49)^\circ$).

9. A method of adjusting a temperature characteristic of the surface acoustic wave device according to claim 3, comprising:

adjusting the temperature characteristic by adjusting an angle of disposition of the surface acoustic wave device on the quartz plate cut out with a Euler angle at (0° , 113° to 135° , $\pm(40$ to $49)^\circ$).

10. A method of adjusting a temperature characteristic of the surface acoustic wave device according to claim 4, comprising:

adjusting the temperature characteristic by adjusting an angle of disposition of the surface acoustic wave device on the quartz plate cut out with a Euler angle at (0° , 113° to 135° , $\pm(40$ to $49)^\circ$).

11. A method of adjusting a temperature characteristic of the surface acoustic wave device according to claim 5, comprising:

adjusting the temperature characteristic by adjusting an angle of disposition of the surface acoustic wave device on the quartz plate cut out with a Euler angle at (0° , 113° to 135° , $\pm(40$ to $49)^\circ$).

12. A method of adjusting a temperature characteristic of the surface acoustic wave device according to claim 6, comprising:

adjusting the temperature characteristic by adjusting an angle of disposition of the surface acoustic wave device on the quartz plate cut out with a Euler angle at (0° , 113° to 135° , $\pm(40$ to $49)^\circ$).